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Mr. Randy Sturgeon (3HW42)
Remedial Project Manager
U.S. EPA Region III
841 Chestnut Building
Philadelphia, PA 19107

W.O. 2798.PP
RE: Proposed Plan Comments
Dover Gas Light Site
Dover, DE

Dear Mr. Sturgeon:

We are writing on behalf of our client, Capitol Cleaners, to offer comments regarding the February 1994, "Proposed Remedial Action Plan, Dover Gas Light Superfund Site, Dover, Kent County, Delaware," prepared by EPA Region III and dated February 1994. Duffield Associates, Inc., is currently providing professional environmental engineering and geology services.

Pursuant to the Proposed Remedial Action Plan (Proposed Plan), the remedial alternative apparently favored for Operable Unit #1 (groundwater) is EPA alternative GW-3, which can be summarized as pumping and treating groundwater. This proposed remedial measure appears to be based upon a Risk Assessment which has been structured to demonstrate a need for remediation and which is based upon an evaluation of remedial alternatives which are derived from contradictory conclusions and using selective "factual" information. Soil remediation, as related by the Proposed Plan's alternative SW-2, only addresses soil contamination above the water table.

Further, in our opinion, the Proposed Plan contains apparently speculative comments which are not substantiated by the data presented or data presented in the supporting Remedial Investigation reports regarding conditions at the former dry cleaning establishment at 411 Governors Avenue. To our knowledge, no records or data have been presented which indicate that underground storage tanks (USTs) containing chlorinated solvents were present at 411 Governors Avenue site, and the statement that the former fuel oil

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storage USTs "undoubtedly contributed BTEX and PAH contamination in the groundwater" is unsubstantiated by soil sample analytic results collected at the time of the tank removal. Unless conclusive data supporting these statements exist, we suggest that these statements be stricken from the Proposed Plan.

The Risk Assessment presented appears to rely upon five potential exposure pathways which, based on the information contained in the Proposed Plan, do not exist and have little or no foreseeable likelihood of coming into existence in the future. These pathways are:

- Adults and children drinking contaminated groundwater.
- Adults showering in contaminated groundwater.
- Children bathing in contaminated groundwater.
- Residents watering lawns with contaminated groundwater.
- Workers washing trucks with contaminated groundwater.

The City of Dover and the Delaware Department of Natural Resources and Environmental Control currently prohibit the installation of groundwater supply wells within the City of Dover. With current knowledge of the contamination in this part of Dover and common prudence regarding the use of unconfined water table aquifers in urban areas as sources of potable water, the probability of a change in the current prohibition is, at best, unlikely. Without the risks associated with the five pathways listed above, there is no risk based need to remediate the dissolved phase groundwater contamination plume in the Columbia aquifer beneath this area of the City of Dover. In effect, the Proposed Plan recognizes this condition where the groundwater pump and treat scenarios (GW-2, GW-3 and GW-4) are evaluated. The Proposed Plan states, "Existing institutional controls will prevent any exposure to the contaminated groundwater while it is being remediated."

Arguably, an appropriate groundwater pump and treat scenario (GW-3) may control the extent of the dissolved contaminant plume associated with the Dover Gas Light Site and may shrink the size of this plume to the location of the proposed arc of pumping wells located across Bank Lane, between North and

Water Streets. However, this type of remedial action has, historically, not proved effective for aquifer restoration when DNAPLs are involved or are suspected to be involved at most of the sites where it has been applied. Pump and treat systems configured similarly to the one proposed mostly remove contaminants dissolved in groundwater, not separate phase pools of dense liquids (DNAPLs). DNAPLs typically migrate under a different set of conditions from groundwater and induced groundwater gradients typically have little effect on the migration of these substances. The goal of the proposed remedial system is not aquifer restoration as presented in the Proposed Plan but would more accurately be described as dissolved phase plume control or containment.

The current state of technology seriously limits what can be done to effectively restore environmental conditions associated with DNAPLs and, in our opinion, no currently available technology can achieve some of the results espoused in the Proposed Plan. For example, the proposed pumping wells, if installed at the proposed locations, probably will not, in our opinion, "prevent any DNAPL from proving a continuing source of contamination to non-DNAPL areas" as the Proposed Plan asserts. According to EPA's Office of Emergency and Remedial Response paper titled, Evaluation of the Likelihood of DNAPL Presence at NPL Sites, National Results, "One of the conclusions to this study (Evaluation of Ground-water Extraction Remedies, EPA Directive 9355.4-05) was that, a key factor preventing efficient site cleanup within a reasonable time-frame was the failure of remedial designs to account for the possibility of subsurface DNAPL." Two major limits that EPA has identified in this same document regarding effective pump and treatment aquifer restorations were inadequate site characterization and the presence of unidentified reservoirs of subsurface DNAPL sources. Our opinion, as stated earlier, is that the proposed remedial techniques do not really account for the possibility of DNAPLs. In our opinion, the extent or existence of DNAPLs associated with the Dover Gas Light Site is currently unknown based on the available Remedial Investigation data and should be further pursued. However, there is an underlying fact that no amount of investigation will identify all pools of DNAPL or residual contamination or hydrogeologic conditions to the extent that a foolproof design can be created to achieve the results espoused by the Proposed Plan, and no currently available technology can completely remove or contain DNAPLs, if they are present.

Based upon the Proposed Plan, the soil removal (SW-2) at the Dover Gas Light Site is to be limited to soils above the

water table. While this strategy appears to be on-track for reducing potential human health risks, the reasoning presented in the Proposed Plan appears to be flawed. One of the stated goals for site soils "is to return the soil at the former coal gas facility to a condition where...it no longer is a continuing source of unacceptable levels of contamination to groundwater." In the Evaluation of Remedial Alternatives," this stated goal is not addressed. Without addressing this goal, the statement on page 18 that, "the soils at the former coal gas plant location would no longer pose a threat to human health or the environment" may not have a basis in fact. Soil contamination exists below the water table based on the information presented in the Proposed Plan. These soils will remain in-situ and uncontained. The subaqueous soil contamination may continue to act as a source for dissolved contaminants in groundwater which, in turn, suggests that groundwater cleanup goals, as stated in the Proposed Plan, probably will not be attained. Additionally, the statement on page 20 that "By removing the contaminated soil from the Site, the mobility of the contaminants will be reduced to zero" also appears to be an extrapolation not supported by facts. Only a partial removal is planned and, in fact, is emphasized by the Proposed Plan ("excavation would not extend below the water table," page 16).

In summary, it is our opinion that a realistic assessment of risks posed by the Dover Gas Light Site would suggest that the dissolved phase groundwater plume emanating from the site does not pose substantial risks to human health. Further, the Proposed Plan apparently reflects a philosophy of taking a costly active remedial approach to the site and has tried to justify this approach. EPA experience with other similar sites have prompted recognition of the "Technical Impracticability" of achieving goals based on too narrow of an interpretation of the NCP.

A more realistic, remedial approach to the Dover Gas Light Site, in our opinion, would be to state the risks to human health and the environment more accurately and propose an appropriate risk reduction solution. A remedial strategy which attempts to remove or control potential DNAPLs at and immediately adjacent to the site through focused extraction or physical containment and removes or contains contaminated soil in the zone of probable human contact appears to better focus on the site issues. These objectives offer benefits of:

- reducing long-term risks to the environment;
- reducing realistic risks to human health;

- reducing the volume of groundwater removed from the aquifer;
- reducing the size and cost of the fluid collection and treatment system;
- reducing the duration of pumping and associated costs; and
- reducing the size of the area impacted by remedial activities, thereby reducing impacts to the community while the remediation is taking place.

Economic and social impacts to the community are a real issue at this site as, ultimately, the community will bear the costs of the remediation and associated disruptions.

We are concerned that the current Proposed Plan does not inform the public of the true extent of what is achievable. By not setting practical goals and by avoiding discussion concerning the limitations of current technology to address the type of contaminants present at the Dover Gas Light Site, the Proposed Plan creates false expectations.

Suitable guidance for appropriate handling of potential DNAPL sites is provided in Office of Solid Waste and Emergency Response (OSWER) Directive 9234.2-25: "Guidance for Evaluating the Technical Impracticability of Groundwater Restoration," dated September 1993, and the covering memorandum from R. J. Guimond, Assistant Surgeon General, dated October 4, 1993. No apparent consideration of these documents or the guidance contained in them is referenced or apparent in the Proposed Plan.

We would be pleased to further discuss our concerns with you.

Very truly yours,

DUFFIELD ASSOCIATES, INC.

M. Richard Beringer

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cc: Mr. Steve Johnson, DNREC